

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-021786**Date Inspected:** 09-Mar-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1900**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Li Yang and Zhu Zhong Hai**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG Trial Assembly**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance (QA) Inspector Mr. S. Manjunath Math was present during the time noted above for observations relative to the work being performed.

This QA Inspector randomly observed the following work in progress:

Orthotropic Box Girder (OBG) at Trial Assembly Areas

Segment 12AE (Chevron's)

This Quality Assurance (QA) Inspector witnessed final bolt tension verification for Angle (X3D) connecting the Floor Beam flange to Lower Chevron Splice plate at Panel Points (PP) 109, PP 110, PP111 and PP 112 for Segment 12AE at Bike Path side and Cross Beam side. Inspected 10% on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00624 Dated March 09, 2011.

Bolt sizes used were M22 x 65 RC Set# DHGM220105 and final torque required was 690 N-m.

Bolt sizes used were M22 x 75 RC Set# DHGM220034 and final torque required was 453 N-m.

The Manual Torque wrench used was Serial No. XO2-666.

Segment 12BE (Chevron's)

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This Quality Assurance (QA) Inspector witnessed final bolt tension verification for Lower Chevron, Upper Chevron, H-Beam connecting the floor beam and splice plate Angle (X3D) connecting the Floor Beam flange to Lower Chevron Splice plate at Panel Points (PP) 113 and PP 114 for Segment 12BE at Bike Path side and Cross Beam side. Inspected 10% on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00624 Dated March 09, 2011.

Bolt sizes used were M22 x 65 RC Set# DHGM220105 and final torque required was 690 N-m.

Bolt sizes used were M22 x 70 RC Set# DHGM220041 and final torque required was 460 N-m.

Bolt sizes used were M22 x 75 RC Set# DHGM220034 and final torque required was 453 N-m.

Bolt sizes used were M22 x 80 RC Set# DHGM220094 and final torque required was 470 N-m.

The Manual Torque wrench used was Serial No. XO2-666.

Segment 12CE (Chevron's)

This Quality Assurance (QA) Inspector witnessed final bolt tension verification for Lower Chevron, Upper Chevron, H-Beam connecting the floor beam and splice plate Angle (X3D) connecting the Floor Beam flange to Lower Chevron Splice plate at Panel Point (PP) 115 for Segment 12CE at Bike Path side and Cross Beam side. Inspected 10% on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00624 Dated March 09, 2011.

Bolt sizes used were M22 x 65 RC Set# DHGM220105 and final torque required was 690 N-m.

Bolt sizes used were M22 x 70 RC Set# DHGM220041 and final torque required was 460 N-m.

Bolt sizes used were M22 x 75 RC Set# DHGM220034 and final torque required was 453 N-m.

Bolt sizes used were M22 x 80 RC Set# DHGM220094 and final torque required was 470 N-m.

The Manual Torque wrench used was Serial No. XO2-666.

Segment 12BW to Segment 12CW (Transverse Splice T-Ribs)

This QA Inspector performed Dimension Control Inspection on the Transverse Splice T-Ribs to T-Ribs for the Segment 12BW to Segment 12CW between Panel Point (PP) 114 to PP 115 at the following locations after Heat Straightening:

Work Point W6 towards Work Point W4 (Side Panel Cross Beam Side) total 19 T-Ribs.

The QA Inspector measured the Vertical Offset using 1(One) Meter Straight Edge and measured the Horizontal

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Offset on the web using a Bridge Cam gauge.

The measurements were recorded in the Dimension Control Plan (DCP) on a separate form and submitted to the Lead Inspector and Engineer for review and disposition.

Segment 12BE to Segment 12CE (Transverse Splice T-Ribs)

This QA Inspector performed Dimension Control Inspection on the Transverse Splice T-Ribs to T-Ribs for the Segment 12BE to Segment 12CE between Panel Point (PP) 114 to PP 115 at the following locations after Heat Straightening:

Work Point E3 towards Work Point E4 (Bottom Panel) total 18 T-Ribs.

Work Point E4 towards Work Point E6 (Side Panel Cross Beam Side) total 19 T-Ribs.

The QA Inspector measured the Vertical Offset using 1(One) Meter Straight Edge and measured the Horizontal Offset on the web using a Bridge Cam gauge.

The measurements were recorded in the Dimension Control Plan (DCP) on a separate form and submitted to the Lead Inspector and Engineer for review and disposition.

Bike Path at Bay # 11

This QA Inspector performed Dimension Control Inspection on the Bike Path bottom plate for flatness check across the longitudinal butt weld. Flatness check was performed on following mentioned Bike Paths and Bike Path are identified as:

BK008A-002.

The QA Inspector measured the flatness using 600mm long straight edge across the Butt (CJP) weld and using 1500mm long straight edge between the stiffeners which are plug weld to bottom plate.

Observed flatness within the allowable tolerance.

The result of the inspection was informed to ZPMC QC Mr. Shao Hai Lang, ABF Mr. Zhao Xian He and Caltrans Lead Inspector Mr. Mark Miller and Mr. Hiranch Patel.

BAY 11 – (Skid More Test)

This QA Inspector witnessed Bolt Testing for ASTM A325M Grade. Observed ZPMC QC Mr. Zhang Hai Jung performing bolts testing.

The testing of bolts was performed to determining Nut Rotation from Snug-Tight condition for Turn-of-Nut Pre-tensioning and High Tension bolt capability verification test.

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Bolt assembly identified as ASTM A325M (High Strength Bolt), Bolt Assembly comprises of (a Bolt, a Nut and a Washer).

Bolt testing was performed on a Unit: Skidmore-Wilhelm; Model: HT; Serial Number: 15866 (Calibration Expiration due date on April 29, 2011) and Torque Wrench identified as XO-326 and Torque Wrench with Dial gauge on it is identified as XO-2 (Calibration Expiration due date on April 14, 2011).

Tested bolt sizes were identified as M16x55 RC Set# DHGM160051.

Tested bolt sizes were identified as M16x60 RC Set# DHGM160052.

5 bolt assemblies were tested per lot.

After determining Nut Rotation from Snug-Tight condition for Turn-of-Nut Pre-tensioning Inspection Report was generated for bolt size M16x45 and M16x50 was generated by ZPMC QA.

After determining High Tension bolt capability verification test Inspection Report # 287 for bolt size M16x55 and Inspection Report # 288 for bolt size M16x60 was generated by ZPMC QA.

The generated reports were submitted to the Caltrans Lead Inspector Mr. Mark Miller for review and disposition.

Segment 12AW (Side Panel to Edge Panel, hold back weld)

This QA Inspector observed the in-process welding by Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as CA3012-006. The welder identification was 046709 and observed welding in the 4G (Overhead) position using approved Welding Procedure Specification WPS-B-P-2212-Tc-U4b-FCM-1. The piece mark was identified as Deck Panel I-Rib hold back weld, Counter Weight side at PP 111.5.

Cross Beam # 17 (Bottom Plate to Vertical Web Plate hold back weld)

This QA Inspector observed the in-process welding by Shielded Metal Arc Welding (SMAW) process on a Complete Joint Penetration (CJP) groove weld. The Weld joint was designated as CB3001A-017-004. The welder identification was 044504 and was observed welding in the 2G (Horizontal) position using approved Welding Procedure Specification WPS-B-P-2212-Tc-U4b-FCM-1. The piece mark was identified as weld connecting Bottom Plate to the Vertical Web Plate hold back weld at PP 112.

Segment 12AE (Deck Panel Diaphragm to Floor Beam Flange, hold back weld)

This QA Inspector observed the in-process welding by Shielded Metal Arc Welding (SMAW) process on a Fillet weld. The Weld joint was designated as Seg3001E-004. The welder identification was 066480 and observed welding in the 2F (Horizontal) position using approved Welding Procedure Specification WPS-2112-FCM-1. The piece mark was identified as weld connecting the Deck Panel Diaphragm to Floor Beam Flange at Bike Path side

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at PP 112.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.

Summary of Conversations:

No relevant conversations were reported on this date.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang 15000422372, who represents the Office of Structural Materials for your project.

Inspected By:	Math,Manjunath	Quality Assurance Inspector
Reviewed By:	Miller,Mark	QA Reviewer
